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<110>   MADDON, Paul J.

DONOVAN, Gerald P.

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SCHÜLKE, Norbert

GARDNER, Jason

MA, Dangshe

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cgcctttctc ccttcgggaa gcgtggcgct ttctcaatgc tcacgctgta ggtatctcag   4560

ttcggtgtag gtcgttcgct ccaagctggg ctgtgtgcac gaaccccccg ttcagcccga   4620

ccgctgcgcc ttatccggta actatcgtct tgagtccaac ccggtaagac acgacttatc   4680

gccactggca gcagccactg gtaacaggat tagcagagcg aggtatgtag gcggtgctac   4740

agagttcttg aagtggtggc ctaactacgg ctacactaga aggacagtat ttggtatctg   4800

cgctctgctg aagccagtta ccttcggaaa aagagttggt agctcttgat ccggcaaaca   4860

aaccaccgct ggtagcggtg gtttttttgt ttgcaagcag cagattacgc gcagaaaaaa   4920

aggatctcaa gaagatcctt tgatcttttc tacggggtct gacgctcagt ggaacgaaaa   4980

ctcacgttaa gggattttgg tcatgagatt atcaaaaagg atcttcacct agatcctttt   5040

aaattaaaaa tgaagtttta aatcaatcta agtatatat gagtaaactt ggtctgacag   5100

ttaccaatgc ttaatcagtg aggcacctat ctcagcgatc tgtctatttc gttcatccat   5160

agttgcctga ctccccgtcg tgtagataac tacgatacgg gagggcttac catctggccc   5220

cagtgctgca atgataccgc gagacccacg ctcaccggct ccagatttat cagcaataaa   5280

ccagccagcc ggaagggccg agcgcagaag tggtcctgca actttatccg cctccatcca   5340

gtctattaat tgttgccggg aagctagagt aagtagttcg ccagttaata gtttgcgcaa   5400

cgttgttgcc attgctacag gcatcgtggt gtcacgctcg tcgtttggta tggcttcatt   5460

cagctccggt tcccaacgat caaggcgagt tacatgatcc cccatgttgt gcaaaaaagc   5520

ggttagctcc ttcggtcctc cgatcgttgt cagaagtaag ttggccgcag tgttatcact   5580

catggttatg gcagcactgc ataattctct tactgtcatg ccatccgtaa gatgcttttc   5640

tgtgactggt gagtactcaa ccaagtcatt ctgagaatag tgtatgcggc gaccgagttg   5700

ctcttgcccg gcgtcaatac gggataatac cgcgccacat agcagaactt taaaagtgct   5760

catcattgga aaacgttctt cggggcgaaa actctcaagg atcttaccgc tgttgagatc   5820

cagttcgatg taacccactc gtgcacccaa ctgatcttca gcatctttta ctttcaccag   5880
```

```
cgtttctggg tgagcaaaaa caggaaggca aaatgccgca aaaaagggaa taagggcgac    5940

acggaaatgt tgaatactca tactcttcct ttttcaatat tattgaagca tttatcaggg    6000

ttattgtctc atgagcggat acatatttga atgtatttag aaaaataaac aaataggggt    6060

tccgcgcaca tttccccgaa aagtgccacc tgacgtc                             6097
```

<210> 13

<211> 6094

<212> DNA

<213> Artificial Sequence

<220>

<223> Plasmid

<400> 13
```
gacggatcgg gagatctccc gatcccctat ggtcgactct cagtacaatc tgctctgatg      60

ccgcatagtt aagccagtat ctgctccctg cttgtgtgtt ggaggtcgct gagtagtgcg     120

cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc     180

ttagggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt     240

gattattgac tagttattaa tagtaatcaa ttacggggtc attagttcat agcccatata     300

tggagttccg cgttacataa cttacggtaa atggcccgcc tggctgaccg cccaacgacc     360

cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc     420

attgacgtca atgggtggac tatttacggt aaactgccca cttggcagta catcaagtgt     480

atcatatgcc aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt     540

atgcccagta catgacctta tgggactttc ctacttggca gtacatctac gtattagtca     600

tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg     660

actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc     720

aaaatcaacg ggactttcca aaatgtcgta caactccgc cccattgacg caaatgggcg      780

gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact agagaaccca     840

ctgcttactg gcttatcgaa attaatacga ctcactatag ggagacccaa gctggctaga     900

aagcttggat ctcaccatgg tgttgcagac ccaggtcttc atttctctgt tactctggat     960

ctctggtgcc tacggggaca tcgtgatgac ccagtctcca gactccctgg ctgtgtctct    1020

gggcgagagg gccaccatca actgcaagtc caaccagagt gtcttacaca gctccaacaa    1080

taagaactat ttagcttggt accagcagaa accaggacag cctcctaaat tgctcatttta   1140
```

```
ttgggcattc ctccgggaat ccggggtccc tgaccgcttc agtggcagcg ggtctgggac   1200

agatttcact ctcaccatca gcagcctgca ggctgaagat gtggcagttt attactgtca   1260

ccaatattat tctactttat atactttcgg cggagggacc aaggtagaga tcaaacgaac   1320

ygtggctgca ccatctgtct tcatcttccc gccatctgat gagcagttga aatctggaac   1380

tgctagcgtt gtgtgcctgc tgaataactt ctatcccaga gaggccaaag tacagtggaa   1440

ggtggataac gccctccaat cgggtaactc ccaggagagt gtcacagagc aggacagcaa   1500

ggacagcacc tacagcctca gcagcaccct gacgctgagc aaagcagact acgagaaaca   1560

caaagtctac gcctgcgaag tcacccatca gggcctgagc tcgcccgtca caaagagctt   1620

caacagggga gagtgttagg cggccgctcg agtctagagg gcccgtttaa acccgctgat   1680

cagcctcgac tgtgccttct agttgccagc catctgttgt ttgcccctcc cccgtgcctt   1740

ccttgaccct ggaaggtgcc actcccactg tcctttccta ataaaatgag gaaattgcat   1800

cgcattgtct gagtaggtgt cattctattc tggggggtgg ggtggggcag gacagcaagg   1860

gggaggattg ggaagacaat agcaggcatg ctggggatgc ggtgggctct atggcttctg   1920

aggcggaaag aaccagctgg ggctctaggg ggtatcccca cgcgccctgt agcggcgcat   1980

taagcgcggc gggtgtggtg gttacgcgca gcgtgaccgc tacacttgcc agcgccctag   2040

cgcccgctcc tttcgctttc ttcccttcct ttctcgccac gttcgccggc tttccccgtc   2100

aagctctaaa tcggggcatc cctttagggt tccgatttag tgctttacgg cacctcgacc   2160

ccaaaaaact tgattagggt gatggttcac gtagtgggcc atcgccctga tagacggttt   2220

ttcgcccttt gacgttggag tccacgttct ttaatagtgg actcttgttc caaactggaa   2280

caacactcaa ccctatctcg gtctattctt ttgatttata agggattttg gggatttcgg   2340

cctattggtt aaaaaatgag ctgatttaac aaaaatttaa cgcgaattaa ttctgtggaa   2400

tgtgtgtcag ttagggtgtg gaaagtcccc aggctcccca ggcaggcaga agtatgcaaa   2460

gcatgcatct caattagtca gcaaccaggt gtggaaagtc cccaggctcc ccagcaggca   2520

gaagtatgca aagcatgcat ctcaattagt cagcaaccat agtcccgccc ctaactccgc   2580

ccatcccgcc cctaactccg cccagttccg cccattctcc gccccatggc tgactaattt   2640

tttttattta tgcagaggcc gaggccgcct ctgcctctga gctattccag aagtagtgag   2700

gaggcttttt tggaggccta ggcttttgca aaaagctccc gggagcttgt atatccattt   2760

tcggatctga tcaagagaca ggatgaggat cgtttcgcat gattgaacaa gatggattgc   2820

acgcaggttc tccggccgct tgggtggaga ggctattcgg ctatgactgg gcacaacaga   2880

caatcggctg ctctgatgcc gccgtgttcc ggctgtcagc gcaggggcgc ccggttcttt   2940
```

```
ttgtcaagac cgacctgtcc ggtgccctga atgaactgca ggacgaggca gcgcggctat    3000

cgtggctggc cacgacgggc gttccttgcg cagctgtgct cgacgttgtc actgaagcgg    3060

gaagggactg gctgctattg ggcgaagtgc cggggcagga tctcctgtca tctcaccttg    3120

ctcctgccga gaaagtatcc atcatggctg atgcaatgcg gcggctgcat acgcttgatc    3180

cggctacctg cccattcgac caccaagcga aacatcgcat cgagcgagca cgtactcgga    3240

tggaagccgg tcttgtcgat caggatgatc tggacgaaga gcatcagggg ctcgcgccag    3300

ccgaactgtt cgccaggctc aaggcgcgca tgcccgacgg cgaggatctc gtcgtgaccc    3360

atggcgatgc ctgcttgccg aatatcatgg tggaaaatgg ccgcttttct ggattcatcg    3420

actgtggccg gctgggtgtg gcggaccgct atcaggacat agcgttggct acccgtgata    3480

ttgctgaaga gcttggcggc gaatgggctg accgcttcct cgtgctttac ggtatcgccg    3540

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tctggggttc gaaatgaccg accaagcgac gcccaacctg ccatcacgag atttcgattc    3660

caccgccgcc ttctatgaaa ggttgggctt cggaatcgtt ttccgggacg ccggctggat    3720

gatcctccag cgcggggatc tcatgctgga gttcttcgcc caccccaact tgtttattgc    3780

agcttataat ggttacaaat aaagcaatag catcacaaat ttcacaaata aagcattttt    3840

ttcactgcat tctagttgtg gtttgtccaa actcatcaat gtatcttatc atgtctgtat    3900

accgtcgacc tctagctaga gcttggcgta atcatggtca tagctgtttc ctgtgtgaaa    3960

ttgttatccg ctcacaattc cacacaacat acgagccgga agcataaagt gtaaagcctg    4020

gggtgcctaa tgagtgagct aactcacatt aattgcgttg cgctcactgc ccgctttcca    4080

gtcgggaaac ctgtcgtgcc agctgcatta atgaatcggc caacgcgcgg ggagaggcgg    4140

tttgcgtatt gggcgctctt ccgcttcctc gctcactgac tcgctgcgct cggtcgttcg    4200

gctgcggcga gcggtatcag ctcactcaaa ggcggtaata cggttatcca cagaatcagg    4260

ggataacgca ggaaagaaca tgtgagcaaa aggccagcaa aaggccagga accgtaaaaa    4320

ggccgcgttg ctggcgtttt tccataggct ccgcccccct gacgagcatc acaaaaatcg    4380

acgctcaagt cagaggtggc gaaacccgac aggactataa agataccagg cgtttccccc    4440

tggaagctcc ctcgtgcgct ctcctgttcc gaccctgccg cttaccggat acctgtccgc    4500

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ctgcgcctta tccggtaact atcgtcttga gtccaacccg gtaagacacg acttatcgcc    4680

actggcagca gccactggta acaggattag cagagcgagg tatgtaggcg gtgctacaga    4740
```

```
gttcttgaag tggtggccta actacggcta cactagaagg acagtatttg gtatctgcgc      4800

tctgctgaag ccagttacct tcggaaaaag agttggtagc tcttgatccg gcaaacaaac      4860

caccgctggt agcggtggtt tttttgtttg caagcagcag attacgcgca gaaaaaaagg      4920

atctcaagaa gatcctttga tcttttctac ggggtctgac gctcagtgga acgaaaactc      4980

acgttaaggg attttggtca tgagattatc aaaaaggatc ttcacctaga tccttttaaa      5040

ttaaaaatga agttttaaat caatctaaag tatatatgag taaacttggt ctgacagtta      5100

ccaatgctta atcagtgagg cacctatctc agcgatctgt ctatttcgtt catccatagt      5160

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ctccggttcc caacgatcaa ggcgagttac atgatccccc atgttgtgca aaaaagcggt      5520

tagctccttc ggtcctccga tcgttgtcag aagtaagttg gccgcagtgt tatcactcat      5580

ggttatggca gcactgcata attctcttac tgtcatgcca tccgtaagat gcttttctgt      5640

gactggtgag tactcaacca agtcattctg agaatagtgt atgcggcgac cgagttgctc      5700

ttgcccggcg tcaatacggg ataataccgc gccacatagc agaactttaa aagtgctcat      5760

cattggaaaa cgttcttcgg ggcgaaaact ctcaaggatc ttaccgctgt tgagatccag      5820

ttcgatgtaa cccactcgtg cacccaactg atcttcagca tcttttactt tcaccagcgt      5880

ttctgggtga gcaaaaacag gaaggcaaaa tgccgcaaaa aagggaataa gggcgacacg      5940

gaaatgttga atactcatac tcttcctttt tcaatattat tgaagcattt atcagggtta      6000

ttgtctcatg agcggataca tatttgaatg tatttagaaa aataaacaaa taggggttcc      6060

gcgcacattt ccccgaaaag tgccacctga cgtc                                  6094
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<210> 14

<211> 481

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 14

```
ggatctcacc atggagttgg gactgcgctg gggcttcctc gttgctcttt taagaggtgt      60

ccagtgtcag gtgcaattgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct     120

gagactctcc tgtgcagcgt ctggattcgc cttcagtaga tatggcatgc actgggtccg     180

ccaggctcca ggcaaggggc tggagtgggt ggcagttata tggtatgatg gaagtaataa     240

atactatgca gactccgtga agggccgatt caccatctcc agagacaatt ccaagaacac     300

gcagtatctg caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag     360

aggcggtgac ttcctctact actactatta cggtatggac gtctggggcc aagggaccac     420

ggtcaccgtc tcctcagcct ccaccaaggg cccatcggtc ttccccctgg caccctctag     480

c                                                                     481
```

<210> 15

<211> 142

<212> PRT

<213> Homo sapiens

<400> 15

```
Met Glu Leu Gly Leu Arg Trp Gly Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
            20                  25                  30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe
            35                  40                  45

Ser Arg Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
    50                  55                  60

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala
65                  70                  75                  80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
                85                  90                  95

Thr Gln Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
            100                 105                 110

Tyr Tyr Cys Ala Arg Gly Gly Asp Phe Leu Tyr Tyr Tyr Tyr Gly
            115                 120                 125

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
    130                 135                 140
```

<210> 16

<211> 463

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 16

```
ggatctcacc atgagggtcc ctgctcagct cctgggactc ctgctgctct ggctcccaga      60

taccagatgt gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga     120

cagagtcacc atcacttgcc gggcgagtca gggcattagc aattatttag cctggtatca     180

gcagaaaaca gggaaagttc ctaagttcct gatctatgaa gcatccactt tgcaatcagg     240

ggtcccatct cggttcagtg gcggtggatc tgggacagat ttcactctca ccatcagcag     300

cctgcagcct gaagatgttg caacttatta ctgtcaaaat tataacagtg ccccattcac     360

tttcggccct gggaccaaag tggatatcaa acgaactgtg gctgcaccct ctgtcttcat     420

cttcccgcca tctgatgagc agttgaaatc tggaactgct agc                       463
```

<210> 17

<211> 127

<212> PRT

<213> Homo sapiens

<400> 17

```
Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Leu Pro
1               5                   10                  15

Asp Thr Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
            20                  25                  30

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
        35                  40                  45

Ile Ser Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Thr Gly Lys Val Pro
    50                  55                  60

Lys Phe Leu Ile Tyr Glu Ala Ser Thr Leu Gln Ser Gly Val Pro Ser
65                  70                  75                  80

Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
                85                  90                  95
```

```
Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr Cys Gln Asn Tyr Asn
            100                 105                 110

Ser Ala Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
        115                 120                 125
```

<210> 18

<211> 508

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

```
<400> 18
ggatctcacc atggggtcaa ccgccatcct caccatggag ttggggctgc gctgggttct    ·60

cctcgttgct cttttaagag gtgtccagtg tcaggtgcag ctggtggagt ctgggggagg    120

cgtggtccag cctgggaggt ccctgagact ctcctgtgca gcgtctggat tcaccttcag    180

taactatgtc atgcactggg tccgccaggc tccaggcaag gggctggagt gggtggcaat    240

tatatggtat gatggaagta ataaatacta tgcagactcc gtgaagggcc gattcaccat    300

ctccagagac aattccaaga acacgctgta tctgcaaatg aacagcctga gagccgagga    360

cacggctgtg tattactgtg cgggtggata taactggaac tacgagtacc actactacgg    420

tatggacgtc tggggccaag ggaccacggt caccgtctcc tcagcctcca ccaagggccc    480

atcggtcttc cccctggcac cctctagc                                      508
```

<210> 19

<211> 143

<212> PRT

<213> Homo sapiens

<400> 19

```
Met Glu Leu Gly Leu Arg Trp Val Leu Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
            20                  25                  30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
        35                  40                  45
```

```
Ser Asn Tyr Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
    50              55              60

Glu Trp Val Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala
65              70              75              80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
                85              90              95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
            100             105             110

Tyr Tyr Cys Ala Gly Gly Tyr Asn Trp Asn Tyr Glu Tyr His Tyr Tyr
        115             120             125

Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
    130             135             140
```

<210> 20

<211> 463

<212> DNA

<213> Artificial Sequence
<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region,
portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning
junction

<400> 20
```
ggatctcacc atgagggtcc ccgctcagct cctggggctc ctgctgctct gtttcccagg    60
tgccagatgt gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga   120
cagagtcacc atcacttgtc gggcgagtca gggcattacc aattatttag cctggtttca   180
gcagaaacca gggaaagccc ctaagtccct tatctatgct gcatccagtt tgcaaagtgg   240
ggtcccatca agttcagcg gcagtggatc tgggacagat ttcagtctca ccatcagcag   300
cctgcagcct gaagattttg caacttatta ctgccaacag tataatagtt acccgatcac   360
cttcggccaa gggacacgac tggagattaa acgaactgtg gctgcaccat ctgtcttcat   420
cttcccgcca tctgatgagc agttgaaatc tggaactgct agc                     463
```

<210> 21

<211> 127

<212> PRT

<213> Homo sapiens

<400> 21

```
Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Cys Phe Pro
```

```
1               5                   10                  15

Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
            20              25                  30

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
            35              40              45

Ile Thr Asn Tyr Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro
        50              55              60

Lys Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
65                  70              75                  80

Lys Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser Leu Thr Ile Ser
                85              90                  95

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn
            100             105                 110

Ser Tyr Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
        115             120             125
```

<210> 22

<211> 490

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 22
```
ggatctcacc atggagttgg gacttagctg ggttttcctc gttgctcttt taagaggtgt    60

ccagtgtcag gtccagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct   120

gagactctcc tgtgcagcgt ctggattcac cttcagtagc tatggcatgc actgggtccg   180

ccaggctcca ggcaaggggc tggactgggt ggcaattatt tggcatgatg gaagtaataa   240

atactatgca gactccgtga agggccgatt caccatctcc agagacaatt ccaagaagac   300

gctgtacctg caaatgaaca gtttgagagc cgaggacacg gctgtgtatt actgtgcgag   360

agcttgggcc tatgactacg gtgactatga atactacttc ggtatggacg tctggggcca   420

agggaccacg gtcaccgtct cctcagcctc caccaagggc ccatcggtct ccccctggc    480

accctctagc                                                          490
```

<210> 23

<211> 145

<212> PRT

<213> Homo sapiens

<400> 23

```
Met Glu Leu Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
            20                  25                  30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
            35                  40                  45

Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
        50                  55                  60

Asp Trp Val Ala Ile Ile Trp His Asp Gly Ser Asn Lys Tyr Tyr Ala
65                  70                  75                  80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Lys
                85                  90                  95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
            100                 105                 110

Tyr Tyr Cys Ala Arg Ala Trp Ala Tyr Asp Tyr Gly Asp Tyr Glu Tyr
            115                 120                 125

Tyr Phe Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
    130                 135                 140

Ser
145
```

<210> 24

<211> 463

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 24
```
ggatctcacc atgagggtcc ctgctcagct cctggggctc ctgctgctct gtttcccagg    60

tgccagatgt gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga   120

cagagtcacc atcacttgtc gggcgagtca ggcattagc cattatttag cctggtttca   180

gcagaaacca gggaaagccc ctaagtccct gatctatgct gcatccagtt tgcaaagtgg   240
```

ggtcccatca aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag   300

cctacagcct gaagattttg caacttatta ctgccaacag tataatagtt tcccgctcac   360

tttcggcgga gggaccaagg tggagatcaa acgaactgtg ctgcaccat ctgtcttcat   420

cttcccgcca tctgatgagc agttgaaatc tggaactgct agc   463

<210> 25

<211> 127

<212> PRT

<213> Homo sapiens

<400> 25

Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Cys Phe Pro
1   5   10   15

Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
            20   25   30

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
        35   40   45

Ile Ser His Tyr Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro
    50   55   60

Lys Ser Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
65   70   75   80

Lys Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
                85   90   95

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn
            100   105   110

Ser Phe Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
        115   120   125

<210> 26

<211> 469

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region,
portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning
junction

<400> 26
ggatcccacc atggggtcaa ccgtcatcct cgccctcctc ctggctgttc tccaaggagt   60

ctgtgccgag gtgcagctgg tgcagtctgg agcagaggtg aaaaagcccg gggagtctct   120

gaagatctcc tgtaagggtt ctggatacag ctttaccagt tactggatcg gctgggtgcg   180

ccagatgccc gggaaaggcc tggagtggat ggggatcatc tatcctggtg actctgatac   240

cagatacagc ccgtccttcc aaggccaggt caccatctca gccgacaagt ccatcagcac   300

cgcctacctg cagtggagca gcctgaaggc ctcggacacc gccatgtatt actgtgcgag   360

acggatggca gcagctggcc cctttgacta ctggggccag ggaaccctgg tcaccgtctc   420

ctcagcctcc accaagggcc catcggtctt cccccctggca ccctctagc   469

<210>   27

<211>   138

<212>   PRT

<213>   Homo sapiens

<400>   27

Met Gly Ser Thr Val Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly
1   5   10   15

Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
            20   25   30

Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
        35   40   45

Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
    50   55   60

Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
65   70   75   80

Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
                85   90   95

Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
            100   105   110

Tyr Tyr Cys Ala Arg Arg Met Ala Ala Ala Gly Pro Phe Asp Tyr Trp
        115   120   125

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
    130   135

<210>   28

<211>   466

<212>   DNA

<213>   Artificial Sequence

<220>

<223> Includes BamHI/Bg1II cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 28

```
ggatctcacc atgagggtcc ccgctcagct tctcttcctt ctgctactct ggctcccaga      60

taccactgga ggaatagtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga     120

aagagccacc ctctcctgca ggaccagtca gagtattggc tggaacttag cctggtacca     180

acagaaacct ggccaggctc ccaggctcct catctatggt gcatcttcca ggaccactgg     240

tatcccagcc aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagcag     300

cctgcagtct gaagattctg cagtttatta ctgtcagcat tatgataact ggcccatgtg     360

cagttttggc caggggaccg agctggagat caaacgaact gtggctgcac catctgtctt     420

catcttcccg ccatctgatg agcagttgaa atctggaact gctagc                    466
```

<210> 29

<211> 128

<212> PRT

<213> Homo sapiens

<400> 29

```
Met Arg Val Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
1               5                   10                  15

Asp Thr Thr Gly Gly Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser
            20                  25                  30

Val Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Thr Ser Gln Ser
        35                  40                  45

Ile Gly Trp Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
    50                  55                  60

Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Thr Thr Gly Ile Pro Ala
65                  70                  75                  80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
                85                  90                  95

Ser Leu Gln Ser Glu Asp Ser Ala Val Tyr Tyr Cys Gln His Tyr Asp
            100                 105                 110

Asn Trp Pro Met Cys Ser Phe Gly Gln Gly Thr Glu Leu Glu Ile Lys
        115                 120                 125
```

<210> 30

<211>   487

<212>   DNA

<213>   Artificial Sequence

<220>

<223>   Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400>   30
```
ggatctcacc atggagtttg ggctgtgctg gattttcctc gttgctcttt taagaggtgt      60

ccagtgtcag gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct     120

gagactctcc tgtgcagcct ctggattcac cttcattagc tatggcatgc actgggtccg     180

ccaggctcca ggcaaggggc tggagtgggt ggcagttata tcatatgatg gaagtaataa     240

atactatgca gactccgtga agggccgatt caccatctcc agagacaatt ccaagaacac     300

gctgtatctg caaatgaaca gcctgagagc tgaggacacg gctgtgtatt actgtgcgag     360

agtattagtg ggagctttat attattataa ctactacggg atggacgtct ggggccaagg     420

gaccacggtc accgtctcct cagcctccac caagggccca tcggtcttcc ccctggcacc     480

ctctagc                                                                487
```

<210>   31

<211>   144

<212>   PRT

<213>   Homo sapiens

<400>   31

```
Met Glu Phe Gly Leu Cys Trp Ile Phe Leu Val Ala Leu Leu Arg Gly
1               5                   10                  15

Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
            20                  25                  30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
            35                  40                  45

Ile Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
        50                  55                  60

Glu Trp Val Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala
65                  70                  75                  80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
                85                  90                  95
```

```
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
            100                 105             110

Tyr Tyr Cys Ala Arg Val Leu Val Gly Ala Leu Tyr Tyr Tyr Asn Tyr
        115                 120                 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
    130                 135                 140
```

<210> 32

<211> 478

<212> DNA

<213> Artificial Sequence

<220>

<223> Includes BamHI/BglII cloning junction, signal peptide, V region, portion of C region and 3'XbaI/NheI (heavy) or NheI (light) cloning junction

<400> 32

```
ggatctcacc atgagggtcc ctgctcagct cctggggctg ctaatgctct ggatacctgg      60

atccagtgca gatattgtga tgacccagac tccactctct ctgtccgtca cccctggaca     120

gccggcctcc atctcctgca agtctagtca gagcctcctg catagtgatg gaaagacctt     180

tttgtattgg tatctgcaga agccaggcca gcctccacag ctcctgatct atgaggtttc     240

caaccggttc tctggagtgc cagataggtt cagtggcagc gggtcaggga cagatttcac     300

actgaaaatc agccgggtgg aggctgagga tgttgggctt tattactgca tgcaaagtat     360

acagcttccg ctcactttcg gcggagggac caaggtggag atcaaacgaa ctgtggctgc     420

accatctgtc ttcatcttcc cgccatctga tgagcagttg aaatctggaa ctgctagc      478
```

<210> 33

<211> 132

<212> PRT

<213> Homo sapiens

<400> 33

```
Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Ile Pro
1               5                   10                  15

Gly Ser Ser Ala Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser
            20                  25                  30

Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser
        35                  40                  45
```

```
Leu Leu His Ser Asp Gly Lys Thr Phe Leu Tyr Trp Tyr Leu Gln Lys
    50                  55                  60

Pro Gly Gln Pro Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe
65                  70                  75                  80

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                85                  90                  95

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Leu Tyr Tyr
            100                 105                 110

Cys Met Gln Ser Ile Gln Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys
        115                 120                 125

Val Glu Ile Lys
    130
```

<210> 34

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 34
gaagatctca ccatg   15

<210> 35

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide

<400> 35
aactagctag cagttccaga tttcaactgc tcatcagat   39

<210> 36

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223>   Synthetic Oligonucleotide

<400>   36
gaagatctca ccatg   15

<210>   37

<211>   30

<212>   DNA

<213>   Artificial Sequence

<220>

<223>   Synthetic Oligonucleotide

<400>   37
gctctagagg gtgccagggg gaagaccgat   30